

REMARKS

Applicant requests reconsideration and allowance of this application in view of the foregoing amendments and the following remarks.

Claims 1-24 are pending in this application, with Claims 1, 8, 12, 19, 23, and 24 being independent. Claims 1-5, 12-16, and 23 have been amended. No new matter has been added.

Claims 1-24 stand rejected under 35 U.S.C. §103(a) as being obvious over U.S. Patent No. 5,659,664 ("Kaja") in view of U.S. Patent No. 5,913,193 ("Huang"). This rejection is respectfully traversed.

In the Office Action, it is noted that a “phoneme” is a member of the set of the smallest units of speech that serve to distinguish one utterance from another in a language or dialect.

This definition of phoneme may be correct from the point of view of phonemics or phonology. Applicant submits, however, that the term “phoneme” does not necessarily always have the same definition from the point of view of engineering, since speech can be considered as sequential signals, and there can be some cases where speech data does not conform to symbolic expression the way it does under the above definition.

For example, signal characteristics of a plosive consonant may change in accordance with front (left) and behind (right) phonemic context, and the plosive consonant is sometimes treated as a variety of types of phonemes. In phonemics, a similar case can occur. Even if the above definition of phoneme is applied, a unique phoneme set cannot always be defined for one language. In the case of Japanese, for example, types of phoneme sets can

change between 20 to 30 types. It is submitted, therefore, that the above definition may be correct in concept, but it remains ambiguous in actual engineering use.

According to the specification, a “phoneme” is used for a process unit of speech synthesis. However, since knowledge of phonemics or phonetics is utilized in designing of the speech synthesis, Applicant is not submitting that there is no relation between the above definition of “phoneme” and “phoneme” defined in the specification.

Thus, the feature of generating means for generating a first label in consideration of a phonemic context for a phonemic label as a search target previously recited in the claim 1 is supported, for example, at page 10, line 23 - page 11, line 1 of the original specification, which reads: “In the first embodiment, as phonemic contexts, two phonemes on both sides of each phoneme, i.e., phonemes as right and left phonemic contexts called a triphone, are used. First of all, in step S1, a phoneme p as a search target from the database 101a is initialized to a triphone ptr.”

According to this description, a triphone is treated as one kind of “phoneme.” It may be understood, then, that a “phoneme” in the present application is used as a process unit for speech synthesis.

The use of “phonemic label” previously recited in the claims was intended to prevent potential misunderstanding of features of the present invention due to any ambiguity in the above-mentioned definition of “phoneme.” However, since the “phonemic label” has been read to make the claims broader than they were prior to presentation of the term, Applicant has accordingly amended the claims to remove reference to the term.

Applicant notes that the feature of re-search means for generating a second label by changing the phonemic context on the basis of the search result obtained by said search means previously recited in claim 1 is supported, for example, at page 11, lines 9-12 of the previous specification, which reads: "If the right phoneme p matching with the triphone ptr is not present in the database 101 a, the phoneme p is changed to the right phonemic context dependent phoneme."

Hence, the present invention can be performed cyclically. S2, S3, and S4 in Fig. 2 constitute a loop process. Therefore, the features previously recited in claim 1 are supported in the specification. Again, however, the claims have been amended, due to the reading of "second label," to remove that term.

Kaja is said to teach that control parameters are stored in a matrix or a sequence list for each polyphone. Kaja may disclose features similar to generating means for generating a second phoneme (presumably, a polyphone of Kaja) in consideration of a phonemic context for a first phoneme as a target, search means for searching a database for phonemic piece data corresponding to the second phoneme, and registration means for registering the search result obtained by the search means in a table in correspondence with only the second phoneme.

In consideration of the remarks above regarding the term phoneme, it is submitted that Kaja fails to teach or suggest re-search means for generating a third phoneme by changing the phonemic context on the basis of the search result obtained by the search means, and re-searching the database for phonemic piece data corresponding to the third phoneme. Furthermore, Kaja fails to teach or suggest registration means for registering the search result

obtained by the search means or the re-search means in a table in correspondence with the second or third phoneme.

Applicant submits that these deficiencies of Kaja are not compensated for by using a labeling technique using Hidden Markov Models stored in a table, as Huang is said to teach.

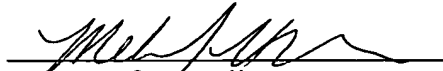
Accordingly, Applicant submits that independent claim 1, and corresponding independent claims 12 and 23, are patentable over the cited art, the art is considered individually or taken in combination. Moreover, at least in view of the remarks above regarding the term phoneme, Applicant submits that the combinations of features recited in independent claims 8, 19, and 24 render those claims patentable over the cited art. Thus, reconsideration and withdrawal of the §103 rejection are respectfully requested.

The dependent claims recite additional features that further distinguish the present invention from the cited art. Individual consideration of the dependent claims is respectfully requested.

Applicant submits that the application is in condition for allowance. Favorable consideration and early passage to issue are respectfully requested.

Applicant's undersigned attorney may be reached in Washington, D.C. by telephone at (202) 530-1010. All correspondence should continue to be directed to the below-listed address.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Melody H. Wu', is written over a horizontal line.

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